

IN THE CLAIMS:

Please amend Claims 13, 22, 24, 31, 39, and 41 as follows:

1. (Previously Presented) An image processing method comprising:
modifying a first image to obtain a second image on the basis of a first signal and a second signal, wherein said first signal is obtained by extracting an edge of the first image, said edge having a thickness according to an attribute of the entire first image, and wherein said second signal is obtained by reducing a number of tone levels.
2. (Original) The method according to claim 1, wherein the second signal is a signal processed by decreasing the number of tone levels of the first image and increasing brightness.
3. (Previously Presented) The method according to claim 1, which includes the step of simultaneously generating the first and second signals as the second image.
4. (Presently Presented) The method according to claim 3, which includes the step of generating the first and second signals by filtering the first image using a predetermined filter.
5. (Original) The method according to claim 4, wherein the predetermined filter has coefficients, a sum total of which is positive.

6.

(Cancelled)

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~~7.~~

(Original) The method according to claim 5, wherein the

predetermined filter has a pixel of interest having a positive coefficient, and all other pixels having negative coefficients.

8-10.

(Cancelled)

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~~11.~~

(Presently Presented) The method according to claim 4, wherein the

predetermined filter is defined by that some of the coefficients of the predetermined filter, for pixels other than a coefficient of a pixel of interest are "0".

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~~12.~~

(Presently Presented) The method according to claim 4, which

includes the step of setting the filter on the basis of brightness of the first image.

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~~13.~~

(Currently Amended) The method according to claim ⁸~~12~~, which

includes the step of setting a larger sum total of coefficients in the filter as the first image is darker.

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~~14.~~

(Presently Presented) The method according to claim ⁹~~13~~, further

comprising a luminance distribution calculation step of calculating a luminance distribution of the first image, and

which includes the step of detecting brightness of the first image on the basis of the luminance distribution.

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~~15.~~ (Previously Presented) The method according to claim ¹⁰~~14~~, which includes the step of detecting brightness of the first image on the basis of an average luminance of the first image.

¹²
~~16.~~ (Original) The method according to claim ¹⁰~~14~~, wherein the luminance distribution calculation step includes the step of generating a luminance histogram of the first image.

¹³
~~17.~~ (Previously Presented) The method according to claim ¹²~~16~~, which includes the step of detecting brightness of the first image on the basis of a median of a luminance histogram.

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~~18.~~ (Previously Presented) The method according to claim ¹²~~16~~, which includes the step of detecting brightness of the first image on the basis of a maximum frequency value of the luminance histogram.

¹⁵
~~19.~~ (Previously Presented) The method according to claim ¹⁰~~14~~, further comprising a correction step of correcting the first image on the basis of the luminance distribution, and

which includes the step of setting the filter on the basis of a correction condition generated in the correction step.

¹⁶
~~20.~~ (Previously Presented) The method according to claim 4, which includes the step of modifying the first image in units of blocks each consisting of a

predetermined number of lines, and controlling a size of the filter in accordance with an object line position for modifying in the block.

21. (Cancelled)

28
22. (Currently Amended) An image processing method comprising:

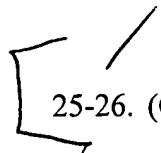
modifying a first image to obtain a second image on the basis of a first signal and a second signal, wherein said first signal is obtained by extracting an edge of the first image, said edge having a thickness according to an attribute of the entire first image, and wherein said a second signal is obtained by reducing a number of tone levels, wherein the first image is a photo image, and

a decoding step of decoding the first image if the first image is block-encoded .

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23. (Previously Presented) The method according to claim 28, which includes the step of modifying the first image decoded in the decoding step to obtain the second image after the first image is smoothed.

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24. (Currently Amended) An image processing method comprising:
modifying a first image to obtain a second image on the basis of a first signal and a second signal, wherein said first signal is obtained by extracting an edge of the first image, said edge having a thickness according to an attribute of the entire first image, and wherein said a second signal is obtained by reducing a number of tone levels, wherein the first image is a photo image, and which includes the steps of tentatively

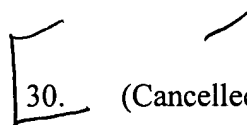
block-encoding and decoding the first image when the first image is not a block-encoded image, and then modifying the first image to obtain the second image.


 25-26. (Cancelled)

¹⁷~~27.~~ (Previously Presented) The method according to claim 1, wherein the attribute of the entire first image is an image size.

¹⁸~~28.~~ (Previously Presented) The method according to claim 1, wherein the attribute of the entire first image is an image resolution.

¹⁹~~29.~~ (Previously Presented) The method according to claim 1, wherein the attribute of the entire first image is manually set.

 30. (Cancelled)

 31. (Currently Amended) An image processing method comprising:
modifying a first image to obtain a second image on the basis of a first signal and a second signal, wherein said first signal is obtained by extracting an edge of the first image, said edge having a thickness according to an attribute of the entire first image, and wherein said second signal is obtained by reducing a number of tone levels;
a an instruction input step for inputting a user instruction that selects a desired one of a plurality of modify modes; and
a an image process step for executing an image process for image

data using the modify mode corresponding to the user instruction,

wherein the plurality of modify modes include an illustration mode for converting the first image into the second image in the modify step, and wherein the instruction input step includes the step of selecting the first image from a plurality of images, selecting the illustration mode as the modify mode for the first image, and setting detailed modify contents in the illustration mode.

32. (Previously Presented) The method according to claim 31, which includes the step of setting a filter on the basis of the detailed setup contents in the instruction input step, and generating the first and second signals by a filter process using the filter.

33. (Original) The method according to claim 32, wherein the detailed setup contents include setups of brightness of the modified image.

34. (Cancelled)

³⁴
~~35.~~ (Original) The method according to claim 31, wherein the detailed setup contents include setups as to whether or not the modified image is grained.

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~~36.~~ (Original) The method according to claim ³⁴~~35~~, wherein when the detailed setup contents are set with grainy conversion of the modified image, the first image is controlled to have block distortion.

³⁴
~~37.~~ (Original) The method according to claim ³⁵~~36~~, wherein when the detailed setup contents are set with grainy conversion of the modified image, the first image is controlled to be a JPEG-encoded image.

38. (Cancelled)

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~~39.~~ (Currently Amended) An image processing method comprising:
modifying a first image to obtain a second image on the basis of a first signal obtained by extracting an edge of the first image, and a second signal obtained by reducing a number of tone levels;
a an instruction input step for inputting a user instruction that selects a desired one of a plurality of modify modes;
a an image process step of executing an image process for image data using a modify mode corresponding to the user instruction, wherein the plurality of modify modes include a illustration mode for converting the first image into the second image in the modify step, and wherein the plurality of modify modes further include a monochrome effect mode for converting the first image into a monochrome image, and wherein the image process step includes the step of executing the illustration mode for converting the first image into the second image and then executing the monochrome effect mode for converting the second image into a monochrome image when the user instruction designates both the illustration mode and the monochrome effect mode.

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~~40.~~ (Previously Presented) The method according to claim ³⁷~~39~~, wherein the illustration mode includes the step of converting a luminance and a color difference

signal of the first image, and

the monochrome effect mode includes the step of converting the color difference signals of the second image.

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41.

(Currently Amended) An image processing method comprising:

modifying a first image to obtain a second image on the basis of a first signal obtained by extracting an edge of the first image, and a second signal obtained by reducing a number of tone levels;

C, a an instruction input step for inputting a user instruction that selects a desired one of a plurality of modify modes;

a an image process step of executing an image process for image data using the modify mode corresponding to the user instruction, wherein the plurality of modify modes include an illustration mode for converting the first image into the second image in the modify step, and wherein the plurality of modify modes further include a monochrome effect mode for converting the first image into a monochrome image, and wherein the instruction input step allows to set a hue in the monochrome effect mode.

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42.

(Previously Presented) The method according to claim 1, further comprising:

a segmentation step of segmenting the first image into a plurality of regions; and

a setting step of setting processing contents of each of the segmented regions, and

wherein the modifying includes the first image in units of regions to obtain the second image.

²¹~~43.~~ (Original) The method according to claim ²⁰~~42~~, wherein the segmentation step includes the step of obtaining a plurality of regions by generating the first image in units of regions.

²²~~44.~~ (Previously Presented) The method according to claim ²⁰~~42~~, wherein the setting step includes the step of setting filters in units of regions, and
C, the modifying includes the step of generating the first and second signals by executing a filter process using filters set in units of regions.

²³~~45.~~ (Original) The method according to claim ²²~~44~~, wherein the setting step includes the step of setting a filter in correspondence with a size of the region.

²⁴~~46.~~ (Previously Presented) The method according to claim ²³~~45~~, wherein the setting step includes the step of setting a filter in correspondence with a number of lines in the region.

²⁵~~47.~~ (Original) The method according to claim ²²~~44~~, wherein the filter set in the setting step includes a filter having different line and column sizes.

²⁶~~48.~~ (Previously Presented) The method according to claim ²²~~44~~, wherein the setting step includes the step of setting coefficients of the filters for each region.

49-52. (Cancelled)

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~~53.~~ (Original) The method according to claim ²²~~44~~, wherein the setting step includes the step of setting a predetermined filter for a region having a size not less than a predetermined size.

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~~54.~~ (Previously Presented) An image processing method comprising:
a modify step that modifies a first image to obtain a second image on the basis of a first signal obtained by extracting an edge of the first image, and a second signal obtained by reducing a number of tone levels;

C₁
a segmentation step for segmenting the first image into a plurality of regions; and

a setting step for setting processing contents of each of the plurality of regions, wherein the setting step includes the step of setting filters in units of regions, and

wherein the modify step includes the steps of modifying the first image in units of regions to obtain the second image, and further includes the modify step of generating the first and second signals by executing a filter process using the filters set in units of regions, and

wherein the setting step further includes the step of setting the filter on the basis of a user instruction.

⁴¹
~~55.~~ (Previously Presented) An image processing apparatus comprising:
input means for inputting a first image;

modify means for modifying a first image to obtain a second image on the basis of a first signal obtained by extracting an edge of the first image, and a second signal obtained by reducing the number of tone levels;

wherein the first signal is a signal obtained by extracting an edge having a thickness according to an attribute of the entire first image, and

output means for outputting the second image.

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~~56.~~ (Original) The apparatus according to claim ⁴¹~~55~~, wherein said modify means obtains the second image by filtering the first image using a predetermined filter.

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57-60. (Cancelled)

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~~61.~~ (Previously Presented) An image processing apparatus comprising:
input means for inputting a first image;
modify means for modifying a first image to obtain a second image on the basis of a first signal obtained by extracting an edge of the first image, and a second signal obtained by reducing the number of tone levels;

output means for outputting the second image;

instruction input means for inputting a user instruction that selects a desired one of a plurality of modify modes; and

image process means for executing an image process for image data using the modify mode corresponding to the user instruction, and

wherein the plurality of modify modes include an illustration mode for converting the first image into the second image by said modify means, and

wherein the plurality of modify modes further include a monochrome effect mode for converting the first image into a monochrome image, and

, wherein when the user instruction designates both the illustration mode and the monochrome effect mode, said image process means executes the illustration mode for converting the first image into the second image, and then executes the monochrome effect mode for converting the second image into a monochrome image.

⁴³
~~62.~~ (Previously Presented) The apparatus according to claim ⁴¹~~58~~, further comprising:

C, segmentation means for segmenting the first image into a plurality of regions; and

setting means for setting processing contents of each of the plurality of regions, and

wherein said modify means modifies the first image in units of regions to obtain the second image.

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~~63.~~ (Original) The apparatus according to claim ⁴³~~62~~, wherein said segmentation means obtains a plurality of regions by generating the first image in units of regions.

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~~64.~~ (Previously Presented) An image processing system which connects an image processing apparatus for generating a second image on the basis of a first image, and an image output apparatus for outputting the second image,

said image processing apparatus having modify means for modifying the first image to obtain the second image on the basis of a first signal obtained by extracting an edge of the first image, and a second signal obtained by reducing the number of tone levels,

wherein the first signal is a signal obtained by extracting an edge having a thickness according to an attribute of the entire first image.

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~~65.~~ (Original) The system according to claim ⁴⁶~~64~~, wherein said modify means obtains the second image by filtering the first image using a predetermined filter.

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~~66.~~ (Original) The system according to claim ⁴⁷~~65~~, wherein said modify means executes different filter processes in units of regions of the first image.

67-71. (Cancelled)

⁴⁹
~~72.~~ (Previously Presented) An image processing system which connects an image processing apparatus for generating a second image on the basis of a first image, and an image output apparatus for outputting the second image,

said image processing apparatus having modify means for modifying the first image to obtain the second image on the basis of a first signal obtained by extracting an edge of the first image, and a second signal obtained by reducing the number of tone levels;

instruction input means for inputting a user instruction that selects a desired one of a plurality of modify modes;

image process means for executing an image process for image data using the modify mode corresponding to the user instruction, and

wherein the plurality of modify modes include an illustration mode for converting the first image into the second image, and

wherein the plurality of modify modes further include a monochrome effect mode for converting the first image into a monochrome image, and

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when the user instruction designates both the illustration mode and the monochrome effect mode, said image process apparatus executes the illustration mode for converting the first image into the second image, and then executes the monochrome effect mode for converting the second image into a monochrome image.

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73. (Previously Presented) Storage medium storing a program code of an image process, said program code including at least:

code of a modify step for modifying a first image to obtain a second image on the basis of a first signal obtained by extracting an edge of the first image, and a second signal obtained by reducing the number of tone levels

wherein the first signal is a signal obtained by extracting an edge having a thickness according to an attribute of the entire first image.

74-76. (Cancelled)